

January 26th 2013

The following are my observations and comments on FCC Docket 01-289

In July of 2012 the NTSB conducted a two day forum on General Aviation Search and Rescue. I was asked to attend the forum and be a member of the Technical Issues Panel along with several other 406 ELT manufacturers, FCC and FAA representatives. This forum brought together a broad spectrum of members of the Search and Rescue community: Air Force, Coast Guard, NOAA, FAA, CAP, Pilot organizations, 406 manufacturers and other interested parties.

The consensus of the people directly involved with Search and Rescue efforts were unanimous in their response that 121.5/243 MHz ELT's were of little or no use since COSPAS/SARSAT has quit monitoring their transmissions. There was also broad and strong support for the requirement that use of 121.5 MHz be discontinued and 406 MHz ELT's be required in all US aircraft.

The lone voice at the forum opposed to the mandatory requirement to discontinue use of 121.5/243 MHz and the requirement to install 406 ELT's was that of the AOPA representative. The AOPA, which I have been a member of for 33 years, has opposed virtually every requirement to mandate equipment contributing to the safety of General Aviation. They were opposed to mode C altitude encoders being required in GA aircraft even after two accidents involving GA aircraft not equipped with encoders and large passenger aircraft resulted in a large loss of life. They were opposed to the mandating of the newer generation TSO 91a 121.5/243 ELT's which had much improved locating ability by satellite. They are opposed to the requirement that ADS-B be mandated in GA aircraft and of course they are opposed to the retrofit of 406 ELT's

The AOPA's representative Melissa Rudinger's opposition to a 406 mandate was based upon the premise that other emerging technologies were available to GA that were or could be superior to ELT's. She cited cell phone technology, Spider Tracks, Spot and ADS-B as technologies that could replace ELT's. I find that ironic in that the AOPA is opposed to ADS-B mandatory implantation yet their representative cites it as a possible replacement for ELT's.

During the New Technology panel of the forum on the second day, all of these new technologies were shown not to have the capability to function as needed by the SAR community. Cell phone coverage only covers a portion of the US. The satellite based technologies such as Spot and Spider tracks can only tell rescuers where the aircraft was last reported up to six minutes before its signal was lost. The FAA representative said that ADS-B would not be available at lower altitudes in many parts of the US and would not be a replacement for ELT's. All of these new technologies have no means of automatically signaling a crash has occurred. All required action by the pilot, surviving passenger(s) or a person who might be monitoring the flight to alert someone the flight was in distress. Most importantly it was pointed out by SAR representatives that none of these devices or companies monitoring these devices has the means to directly coordinate and send data to the SAR system. It could take hours or days to notify local and national SAR operations centers of the emergency. I believe it was one of the Air Force representatives when asked to what accuracy could they locate a 121.5/243 ELT using reports of the ELT signal from overflying commercial airliners at 35,000 feet who responded they could locate them to within about 600 miles.

Today there is available at a relatively insignificant cost, proven 406 MHz technology that can save lives and offer worldwide coverage at no cost to the GA operator except for the cost of installation and maintenance of the ELT. All of the satellite based new emerging technologies are fee based and require an ongoing subscription after the equipment is installed. The satellite based devices can offer convenience features to the aviator but cannot fulfill the need for immediate accurate location of a downed aircraft.

The 3^d rulemaking proposed in June of 2010, fell short of the needs of General Aviation in several ways. Today all of those concerns have been mitigated. Since that time retail costs of 406 ELT's have dropped dramatically to as low as \$550.00 for a GPS capable ELT. A number of new manufacturers have entered the market with low cost ELT's. Manufacturing capacity has increased greatly. With the tooling our company has in place now we are capable of producing 5,000+ ELT's per month. Other manufacturers have similar capabilities.

Based upon the manufacturing capabilities which are now in place I would recommend that the FCC require the 121.5/243 MHz frequency ELT's be prohibited from use except when integrated with a 406 MHz ELT by December 31st 2015. This time frame would also allow for manufacturers to ramp up the supply chains need to produce ELT's in the quantities required and allow ample time for operators to have them installed. I believe the proposal to no longer certify 121.5/243 MHz ELT's and the prohibition of import or sale of 121.5/243 ELT's 1 year after the rules effective date are reasonable. We discontinued the manufacture of our 121.5/243 ELT in February 2011 when we received COSPAS/SARSAT approval of our 406 most of the other 406 manufacturers have done the same.

We estimate the cost for our ELT and installation for the 55,000 US aircraft having our model E-01 121.5/243 MHz ELT installed to be \$550.00 for the ELT and \$70.00 labor based upon an average shop labor rate of \$70.00 for a total of \$620.00. This does not include connection to the aircraft GPS. Connection to the GPS which is optional we estimate would add an additional \$210.00 in labor for a total of \$830.00.

We estimate a complete new ELT installation of parts and labor can vary from \$830.00 for a simple single engine installation without GPS. To \$1,100.00 for a large twin with GPS installed.

An accident in Antarctica of a twin Otter on January 24th of this year dramatically illustrates the capability and necessity for 406 Mhz ELT's. The aircraft was equipped with a 406 Mhz ELT and within minutes Search and Rescue had the identity of the aircraft and it's GPS location. They were able to dispatch a helicopter to the site and it reported that the aircraft was lodged on the side of a mountain peak and because of the extensive damage they were able to ascertain the crash was not survivable. Had the aircraft not been equipped with a 406 once it was determined that the aircraft was overdue at its destination, a large search would have been undertaken to fly grid patterns along the expected route trying to locate the aircraft. This would have put searchers lives at risk and used valuable resources. Had there been survivors such delays would be a matter of life or death.

<http://avherald.com/h?article=45cad699>

Following is a transcript of my presentation at the NTSB forum it elaborates on many of the above comments.

*Mike Akatiff
President
ACK Technologies Incorporated*

• Transcript of the NTSB Forum presentation July 17th 2012

- Good afternoon madam chairman and members of the board*
- I am Mike Akatiff with ACK Technologies located in San Jose California*
- Thank you for inviting me to participate in this panel*
- I believe most of you are familiar with the safety benefits 406 ELT's can provide to general aviation so my presentation today will outline what I believe to be a reasonable argument for the mandatory retrofit of 406 ELT's.*

- *A number of new manufacturers have entered the market and 406 ELT costs have dropped dramatically over the last two years.*
- *5 years ago the cost for a 406 with GPS was close to \$5,000.*
- *Just over one year ago the cost for a 406 with GPS was over \$2,500.*
- *Today 406 ELT's with GPS are available from \$550 to \$1100 dollars from a variety of manufacturers.*
- *GPS enabled ELT's provide the fastest response and most accurate location of downed aircraft.*
- *As other manufacturers enter the market and as this technology advances, the cost of ELT's will continue to decline.*
- *The cost to install a 406 ELT can vary depending on aircraft type and the complexity of the installation.*
- *We offer a drop-in replacement for the 55,000 plus ACK model E-01 ELT's that are still in service in the US.*
- *Without connecting GPS to the ELT, retrofit installation time can be less than one hour in many cases.*
- *Connection to the GPS if desired can add an additional 2 - 3 hours installation time.*
- *A complete new installation of our ELT with GPS can typically take from 4 to 6 hours to complete.*
- *Aircraft shop labor rates vary between \$65 and \$100 per hour.*
- *In 2009 we attended the AOPA convention to talk to pilots about how the general aviation community felt about ELT's.*
- *We spoke with about 800 pilots at the convention.*
- *Most pilots viewed the ELT as a nuisance and of not much use but required by FAA and Canadian regulations. Of course none thought they would ever crash.*
- *We were surprised to find of the pilots that knew what ELT was installed in their aircraft, more than half still had the old TSO C-91 ELT installed. Most dating back to the 1970's.*
- *An FAA study done in 1982 by Hugh Waterman of ANM-130L found that over 40% of TSO C-91 ELT's in general aviation aircraft tested, failed to operate primarily because of battery issues.*

• **Mandates do work to benefit General Aviation**

- *In 1987 the FAA proposed aircraft flying within 60 miles of a TCA (now class B airspace) be equipped with an altitude encoder.*
- *At that time the cost of an encoder was approximately \$1,000.*
- *This was strongly opposed by the AOPA and other pilot's organizations.*
- *We introduced our model A-30 encoder in early 1988 at a retail price of \$299.*
- *In 1989 a rule was implemented and by then encoder prices had dropped to \$250 or less.*
- *Today virtually all general aviation aircraft are equipped with an encoder.*
- *Based on the 1989 cost of \$250, the inflation adjusted cost today would be \$489.*
- *Yet today you can purchase ours and other manufacturer's encoders for less than \$200*

- ***Voluntary replacement is not effective***

- *In the late 1980's the FAA proposed mandatory replacement of the older TSO C-91 ELT's with TSO C-91a ELT's*
- *Again this was opposed by the AOPA and other pilot's organizations there was only one manufacturer and the cost was over \$1000 dollars*
- *In 1991 we received approval for the model E-01 121.5/243 MHz ELT with a suggested retail price of \$299.*
- *Several other manufacturers followed suite and produced ELT's from \$250 to \$500 dollars.*
- *The mandatory replacement was never implemented.*
- *In the mid 1990's the old TSO C-91 manufacturing approval was revoked but older ELT's were allowed to remain in use until they were no longer serviceable.*
- *In February of 2011 when we ceased production of our model E-01 retail pricing had dropped to \$180 or less.*
- *Today we estimate that close to 50% of the US aircraft still have the old TSO C-91 ELT's installed, most of which are 30 to 40 years old.*
- *406 MHz technology is a vast improvement over existing TSO C-91 and 91a ELT's.*
- *The cost of the COSPAS/SARSAT system is borne by the US and several other countries most countries have required retrofit.*
- *If not mandated we will still see many general aviation aircraft 10 to 15 years from now flying with 50+ year old ELT technology.*
- *To fill a typical single engine piston airplane with fuel today costs over \$500.*
- *A mandate to install a 406 MHz ELT is a relatively insignificant expenditure when amortized over the life of an ELT which has been up to 40 years.*
- *This single act would bring about a significant increase in safety to the general aviation community at a very modest cost. If you factor in the current cost of battery replacements and maintenance of the old ELT's, along with reduced search and rescue costs, the benefits of mandating 406 ELT's speak for themselves.*
- *This concludes my presentation*